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Results of the September 25, 2007, samplings of the First-Stubble (third sampling) and Plant-Cane (first sampling) Sugarcane Maturity Tests at the USDA-ARS Sugarcane Research Laboratory's Ardoyne Research Farm at Schriever, LA are attached. The study is designed to examine the natural ripening process of the first-stubble crop in 2-wk increments, and compare the results for the same harvest dates over a 5-yr period (2003 – 2007); consequently, a glyphosate-containing ripener is not applied. Samples consist of 15, hand-cut stalks of clean, trash-free and properly topped cane from each of four replications. **When mechanically harvested, one can expect TRS/TC levels to be 10 to 20% lower as a result of additional trash in the cane.** The first-stubble study includes eight released Louisiana varieties: LCP 85-384, HoCP 85-845, HoCP 91-555, Ho 95-988, HoCP 96-540, L 97-128, L 99-226, and L 99-233 and the newly released variety HoCP 00-950. The plant-cane study also includes the variety L01-283 that is a candidate for release in 2008. The variety HoCP 85-845 is no longer being planted in our maturity studies as the acreage planted to this variety is declining.

The Ardoyne Farm has received timely rains throughout the growing season. Since the last sampling, the farm received no rain until the scheduled sampling date of September 24<sup>th</sup> when 2-in. of rain was recorded for the 24-hour period. As a result, the sampling was delayed until the 25<sup>th</sup>. With the exception of L 99-233, the rain and wind associated with this event did not cause significant lodging.

**First-stubble.** During the 15-day interval, the stubble crop grew an average of 7 in., but decreased in stalk weight by 0.1 lbs/stalk, probably as a result of the 2-wk dry period that ended on the day of sampling. Growth of 10 in. or more was obtained with LCP 85-384, HoCP 91-555, and HoCP 95-988. However, as an average, the stalks are 0.3 lbs. lighter and 2 in. shorter than in 2006 and would be considered average in stalk height and weight when one considers the 5-yr average. Density measurements began in 2005 for the first-stubble study. Despite the smaller stalks in 2007 compared to the previous two years, stalk densities are higher in 2007 for all varieties. The newly released variety HoCP 00-950 continues to have some of the shortest stalks of the varieties in this test, but its stalks are heavier than LCP 85-384, HoCP 91-555, and L 99-233, and it has the greatest stalk density of any variety in this test.

Brix, sucrose, and purities continue to be higher in 2007 than in 2006 at this sampling date, and as a result, the average theoretically recoverable sugar (TRS) levels are nearly 22 lbs/ton of cane (TC) higher



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in 2007 than in 2006 for this sampling date. Like stalk weight and height, when one considers the 5-yr average for the core varieties, TRS levels would be considered average for this time of year. Of the varieties with major plantings for harvest in 2007, L 97-128 continues to have the highest early TRS levels producing 222 lbs/TC. This continues to be approximately 32 lbs/TC higher than both LCP 85-384 and HoCP 96-540. As can be seen, HoCP 00-950 has the highest TRS/TC level at 253 lbs, which continues to be 31 and 64 lbs/TC higher than L 97-128 and HoCP 96-540, respectively.

**Plant-cane.** Average plant-cane stalk heights and weights for the six varieties included in the last five years are considered average for this sampling date. Stalk density estimates were first collected in the plant-cane study in 2006 for this sampling period. Stalk densities are higher for all varieties in 2007 as compared to 2006 and essentially equivalent to densities in the first-stubble test.

Of concern is the fact that Brix, sucrose, and purity percentages in the plant-cane crop are all lower than in previous years and significantly less than the percentages obtained in the first-stubble test. As a result, TRS levels are lower than those in the previous years and 64 lbs/TC lower than the average TRS levels in the first-stubble crop on this date. Like the first-stubble results, HoCP 00-950 has the highest TRS level at 215 lbs/TC which is 58 and 77 lbs/TC higher than L 97-128 and HoCP 96-540, respectively. The experimental variety, L 01-283, appears to be a good “early sugar” variety with TRS levels (180 lbs/TC) between L 97-128 and HoCP 00-950.

The fourth sampling for the maturity test is scheduled for October 9<sup>th</sup>.

**Reminder.** If you would like to discontinue your receipt of these reports or if you know of individuals who would like to begin receiving this information in 2007, please contact Mrs. Sandy Roberts by email ([sroberts@srcc.ars.usda.gov](mailto:sroberts@srcc.ars.usda.gov)). Emailing insures address accuracy. Information regarding USDA research activities can also be found on our website: [www.ars.usda.gov/msa/srcc/sru](http://www.ars.usda.gov/msa/srcc/sru).

*Maturity reports are prepared by Dr. Ed Richard of the USDA-ARS Sugarcane Research Lab.*

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, SRRC, Sugarcane Research Unit, Houma, LA, September 25, 2007<sup>1</sup>.

Variety	Year	Stalk <sup>2</sup>				Normal juice <sup>3</sup>			Sugar yield	Previous sample date <sup>4</sup>	TRS change from previous sample
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.			
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)
LCP 85-384	2007	1.5	87	0.73	1.18	14.01	10.70	76.36	188.8	167.8	21.0
	2006	1.9	96	0.79	1.18	13.99	10.72	76.59	189.5	156.2	33.3
	2005	1.4	74	0.77	0.99	14.63	10.97	74.92	191.6	156.5	35.1
	2004	1.5	91	---	---	14.54	11.12	76.44	196.3	190.6	5.7
	2003	1.6	81	---	---	14.76	11.58	78.40	207.3	186.4	20.9
HoCP 85-845	2007	1.8	80	0.81	1.15	14.74	11.91	80.76	215.8	202.1	13.7
	2006	2.4	97	0.92	1.09	14.90	11.93	80.08	215.9	171.3	44.6
	2005	1.7	79	0.83	1.02	15.05	11.77	78.22	210.5	183.2	27.3
	2004	1.8	83	---	---	14.96	11.97	80.00	216.4	206.1	10.3
	2003	1.6	73	---	---	15.76	12.34	78.38	220.6	203.5	17.1
HoCP 91-555	2007	1.5	88	0.74	1.09	15.43	11.79	76.38	206.1	189.2	16.9
	2006	1.6	88	0.79	1.08	14.52	10.41	71.67	175.5	142.8	32.7
	2005	1.5	84	0.78	1.03	15.74	11.66	74.04	200.3	160.8	39.5
	2004	1.6	90	---	---	14.96	11.15	74.52	192.5	175.2	17.2
	2003	1.5	77	---	---	15.63	12.43	79.58	221.9	196.8	25.1
Ho 95-988	2007	2.1	92	0.86	1.09	14.32	10.82	75.49	189.8	156.4	33.4
	2006	2.2	91	0.88	1.08	13.86	10.08	72.71	173.2	140.5	32.7
	2005	1.8	80	0.86	0.96	14.81	10.95	73.91	189.9	153.7	36.2
	2004	---	---	---	---	---	---	---	---	---	---
	2003	---	---	---	---	---	---	---	---	---	---
HoCP 96-540	2007	2.0	88	0.81	1.22	14.06	10.66	75.85	189.4	178.2	11.2
	2006	2.3	95	0.83	1.21	13.55	9.94	73.34	173.5	151.3	22.2
	2005	1.8	81	0.84	1.02	14.56	10.90	74.82	192.1	163.7	28.4
	2004	1.9	89	---	---	14.76	11.37	77.00	203.5	191.9	11.7
	2003	1.8	79	---	---	14.76	11.42	77.28	205.0	178.6	26.4
L 97-128	2007	2.0	95	0.8	1.16	15.49	12.37	79.83	222.0	209.7	12.3
	2006	2.2	103	0.83	1.12	15.27	11.91	77.97	214.7	180.6	34.1
	2005	1.9	91	0.84	0.97	15.80	12.13	76.75	216.7	193.9	22.8
	2004	2.1	97	---	---	16.34	13.21	80.83	242.4	228.0	14.4
	2003	1.8	82	---	---	16.45	13.23	80.41	242.1	225.2	16.9
L 99-226	2007	2.3	94	0.86	1.16	14.87	11.61	78.02	209.3	177.7	31.6
	2006	2.6	99	0.93	1.09	14.61	11.19	76.60	199.7	170.6	29.1
	2005	2.0	80	0.91	0.93	14.83	11.13	75.00	196.4	172.7	23.7
	2004	---	---	---	---	---	---	---	---	---	---
	2003	---	---	---	---	---	---	---	---	---	---
L 99-233	2007	1.6	95	0.72	1.14	14.28	10.77	75.40	186.9	162.1	24.8
	2006	1.7	104	0.78	1.01	13.44	9.78	72.79	168.2	148.9	19.3
	2005	1.4	87	0.75	0.95	15.96	12.26	76.84	217.2	181.5	35.7
	2004	1.6	100	---	---	14.52	11.21	77.10	198.9	197.4	1.5
(Cont'd.)	2003	---	---	---	---	---	---	---	---	---	---

Variety	Year	Stalk <sup>2</sup>				Normal juice <sup>3</sup>			Sugar yield	Previous sample date <sup>4</sup>	TRS change from previous sample
		Wt. (lb.)	Lh. (in.)	Dia. (in.)	Density (g/cm3)	Bx. (%)	Su. (%)	Pu. (%)	TRS (lb.)	TRS (lb.)	(lb.)
HoCP 00-950	2007	1.7	81	0.77	1.25	16.67	13.60	81.61	253.2	241.6	11.6
	2006	---	---	---	---	---	---	---	---	---	---
	2005	---	---	---	---	---	---	---	---	---	---
	2004	---	---	---	---	---	---	---	---	---	---
	2003	---	---	---	---	---	---	---	---	---	---
Averages <sup>5</sup>	2007	1.7	89	0.77	1.16	14.67	11.37	77.43	201.5	184.9	16.6
	2006	2.0	94	0.83	1.14	14.24	10.75	75.42	188.6	155.4	33.2
	2005	1.6	83	0.81	1.00	15.19	11.51	75.77	202.6	171.2	31.5
	2004	1.8	92	---	---	14.89	11.55	77.47	205.9	194.2	11.7
	2003	1.7	78	---	---	15.28	12.00	78.47	215.3	193.5	21.8

<sup>1</sup> Data for each parameter represents the average of four replications of 15 stalks each.

<sup>2</sup> Stalk diameter and density based on a subsample consisting of 8 randomly selected stalks from the 15-stalk sample of each rep.

<sup>3</sup> Brix factor = .8854; Sucrose factor = .8105.

<sup>4</sup> Previous sample date was September 10, 2007.

<sup>5</sup> Averages are based only on varieties included in previous year's first-stubble maturity study (LCP 85-384, HoCP 85-845, HoCP 91-555, HoCP 96-540, L97-128, and L 99-233).

Maturity studies on plant-cane grown on mixed land at the Ardoyne Farm, USDA-ARS, SRRC, Sugarcane Research Unit, Houma, LA, September 26, 2007<sup>1</sup>.

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Variety	Year	Stalk <sup>2</sup>				Normal juice <sup>3</sup>			Sugar yield
		Wt. (lb.)	Lh. (in.)	Dia. (in.)	Density (g/cm3)	Bx. (%)	Su. (%)	Pu. (%)	TRS (lb.)
L 01-283	2007	2.1	93	0.82	1.20	14.03	10.27	73.03	180.5
	2006	---	---	---	---	---	---	---	---
	2005	---	---	---	---	---	---	---	---
	2004	---	---	---	---	---	---	---	---
	2003	---	---	---	---	---	---	---	---
Averages <sup>5</sup>	2007	2.2	97	0.84	1.16	12.3	8.4	68.0	138.1
	2006	2.4	97	0.90	1.06	15.2	11.8	78.0	211.6
	2005	---	---	---	---	---	---	---	---
	2004	2.0	91	---	---	15.3	12.0	78.1	214.7
	2003	1.5	72	---	---	11.9	9.0	64.4	157.6

<sup>1</sup> Data for each parameter represents the average of four replications of 15 stalks each.

<sup>2</sup> Stalk diameter and density based on a subsample consisting of 8 randomly selected stalks from the 15-stalk sample of each rep.

<sup>3</sup> Brix factor = .8854; Sucrose factor = .8105.

<sup>4</sup> No data due to hurricane Rita.

<sup>5</sup> Averages are based only on varieties included in previous year's plant-cane maturity study (LCP 85-384, HoCP 91-555, Ho 95-988, HoCP 96-540, L97-128, and L99-233).